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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 61144RCE(70904)

Application Number	Filed
10/824,926-Conf. #7906	April 14, 2004
First Named Inventor: Hideharu Tajima	
Art Unit: 2627	Examiner: Shen, Kezhen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant /inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [x] attorney or agent of record. Registration number 27,840
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____

Signature

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August 28, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

- [ ] *Total of 1 forms are submitted.

Docket No.: 61144RCE(70904)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Hideharu Tajima, et al.

Application No.: 10/824,926 | Confirmation No.: 7906

Filed: April 14, 2004 | Art Unit: 2627

For: OPTICAL DATA RECORDING MEDIUM AND METHOD FOR REPRODUCING RECORDED DATA | Examiner: Shen, Kezhen

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REMARKS: PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

The following remarks support Applicants' "Pre-Appeal Brief Request for Review" filed concurrently herewith. These remarks constitute no more than five pages, and are being filed with a Notice of Appeal. No amendments are being filed with this request.

Claims 1, 3-13 and 17-18 have been rejected under 35 USC §103(a) as being unpatentable over Tominaga et al. (US Patent No. 5,569,517) in view of Jung (US Patent No. 5,516,568). That rejection is respectfully ***traversed***. Applicants are not filing any Amendment with this Request. Applicants respectfully request review of the Final Office Action in the above-referenced application as to the rejected claims. Applicants are filing the within "Pre-Appeal Brief Request for Review" based on the following clear errors and/or omissions in the FINAL Office Action mailed on 28 May 2009 without prejudice to their right to the pursuit of a full subsequent Appeal.

First Clear Error and/or Omission in the Final Office Action:

The Examiner has made a clear error and/or omission as to the rejection of claims 1, 3-13 and 17-18 at least because the Tominaga, et al reference does not teach disclose or suggest a protective layer 10 having "pits" corresponding to the recorded data as disclosed with respect to the substrate 2.

While it may be that from a solely geometrical standpoint pit-like and land-like areas are formed on the protective layer 10 during the manufacture of the Tominaga et al device, those areas do not correspond to recorded data according to any teaching, disclosure or suggestion of the Tominaga reference.

Second Clear Error and/or Omission in the Final Office Action:

The Examiner has made a clear error and/or omission as to the rejection of claims 1, 3-13 and 17-18 at least because the Tominaga reference does not teach, disclose or suggest that the substrate and the protective layer should be (can be, or are) made of the same material. Tominaga's substrate 2 and the protective layer 10 are to be formed of less heat resistant resins than the mask layer 32 and can be deformed (see Tominaga et al at Column 7, lines 44-47), ***but the substrate and the protective layer are not disclosed as being formed of the same material. (Compare Tominaga substrate resins at Col. 4, ln 48-61 to his protective layer organic materials col 8, ln 7 – 15. Also note that the portion of the Tominaga reference relied upon by the Examiner deals with mask 32.)***

Third Clear Error and/or Omission in the Final Office Action:

The Examiner has made a clear error and/or omission as to the rejection of claims 1, 3-13 and 17-18 at least because the Tominaga et al reference does not teach, disclose or suggest either alone or in combination with the Jung reference or the knowledge of one of ordinary skill in the art at the time that the present invention was made that in the super resolution context (i) a pit length on a light-incident-surface for recording information should be shorter than the resolution limit of the associated optical system, or (ii) that the light-incident-side of the substrate should be the substrate side adjacent to the reproducing layer.

In this respect, Applicants note that the Tominaga et al. reference, in Figures 1 and 2, shows pits 21 that are shorter than the diameter ϕ_0 of a reading light beam. However, this is insufficient to teach, disclose, suggest or infer the claimed "pits disposed on a light incident surface thereof, corresponding to the recorded data, which are shorter than a resolution limit of an optical system of a reproducing apparatus which reproduces the recording medium".

The reading beam spot diameter is conventionally denoted as λ/NA (λ: being the wavelength of read light beam, and NA being the numerical aperture). In contrast, the optical resolution limit of the reading optical system is typically denoted by λ/(4NA). The pits depicted by Tominaga et al are longer than this optical resolution limit, and the Examiner has admitted that Tominaga does not explicitly teach pits that are less than the optical resolution limit as calculated by λ/(4NA) (see Official Action 4 March 2008, page 2, para 2). Nevertheless, the Examiner maintains, without any support in the cited art, that one of ordinary skill in the art at the time that the present invention was made would have understood Tominaga as teaching pits shorter than the optical resolution limit by inference from the section at Column 10, lines 7-20. In contrast, however, it is to be noted that the present specification, on page 39, the last paragraph to page 40, paragraph 3, specifically describes the use of pits < 0.14 μm, that is shorter than the optical resolution limit, in securing sufficient signal quality (optical resolution limit: 0.16 μm = 408 nm/ (4 x 0.65).

Furthermore, the crystal-to-liquid or amorphopus-to-liquid materials mentioned by Tominaga at Col. 2, lines 24-35 are suggested to achieve higher resolutions than the resolution limit of the associated optical system. Those materials are admitted by the Examiner to be different from, ***and to function differently from***, the materials that Tominaga et al discusses with respect to his Fig. 2 that utilize a crystal-to-crystal transition to effect a super resolution capability that may increase or decrease reading light reflectivity and hence resolution. (see Tominaga at Col. 4, ln 65 to Col. 5, ln 54). Accordingly, since the discussion at Col. 10, lns 7-20, of Tominaga only ***suggests*** that a crystal-to-crystal type of super resolution read out was obtained in one example, and did so without specifying the size of the pits involved in storing information, Applicants respectfully submit that the actual disclosure of the Tominaga reference relied upon by the Examiner does not support the inferences that the Examiner draws from it, i.e., so-called "super resolution" technology delivers a desired performance when the length of the pits are at or below the optical resolution limit of the associated optical system. Indeed, so-called "super resolution technology" does not always deliver desired performance from pits having lengths at or below the optical resolution limit.

This is explained in more detail in Applicants' Amendment After Final Rejection of 3 July 2008, Pages 17, ln 1 to Page 22, ln 4, including the attachments thereto with regard to super resolution in situations wherein pits longer than the optical resolution limit are utilized.

Therefore, the Examiner's inference that Tominaga achieves a higher resolution limit than the optical resolution limit of the associated optical system ***does not*** constitute a teaching, disclosure or suggestion that that higher resolution limit originates with signals reproduced from pits shorter than the resolution limit of the optical system as herein claimed. The Tominaga et al disclosure simply does not provide the quantitative measurement basis needed to support the Examiner's position, and, in fact, Tominaga appears to teach that the effective resolution obtained therein is larger than the $\lambda/4NA$ of the original beam (see Tomiaga, Col. 4, ln 65 to Col. 5, ln 54 and drawings).

In addition, as to the combination of the Tominaga reference with the Jung reference, attention is directed to the detailed discussion at Page 13, second to last paragraph to page 15, last line, of Applicants' Amendment of 20 February 2009. Summarily speaking, Applicants assert that the Jung reference discloses an optical data recording medium wherein the recording layer (that is not pits and not clearly interchangeable with pits) is located on the light incident surface and the reproducing layer is provided to face the light incident surface. Hence, as will appear more fully below, Applicants respectfully submit that the Examiner's apparent belief that it would have been obvious to one skilled in the art to simply apply the Jung orientation of surfaces to the pitted surface and mask surface of Tominaga is in error.

Also, Applicants submit that if the Examiner's position was correct, assuming that the conventional disc described in (Example 1) of the present application corresponds to the arrangement disclosed in Tominaga, it should follow that arrangements according to the present claims are obtainable by applying the arrangement of Jung to that conventional disc. However, such is not the case. This is because at the time that the present invention was made there were limitations in the actual manufacturing of a substrate such that the accomplishment of the presently claimed super resolution (i.e., improvements in recording density) could not be achieved by those skilled in the art.

Instead, it was deemed necessary to increase recording density (capacity) by shortening

the distance between the light incident side of the disk and an adjacent information recording layer so as to increase the NA of the reproducing apparatus in the manner of a Blue-ray disk, for example. The changing of the light-incident-side of the disk from the substate side to the recording layer side thereof is included in all of the present claims, and this feature is especially effective in reading the pits shorter than the resolution limit as herein claimed. In addition, in the first two paragraphs of Page 28 of the Amendment of 1 November 2007, the benefits achieveable in the present invention by the irradiation of the light beam from above the reproducing layer are discussed. Nevertheless, at the time that the present invention was made, those benefits were not known to be attainable without an alteration of the NA of the conventional disk. In particular, it will be understood that as compared with a conventional DVD or the like, it is extremely difficult to manufacture a Blue ray disk equivalent provided with pits having lengths corresponding to the Blue ray disk resolution. This is because the cutting techniques required for forming pits corresponding to the Blue ray disk are fundamentally different from, and more difficult and time consuming than, those sufficient for a DVD.

Applicants thus submit that all of the claims under final rejection are in condition for allowance and should be allowed in response to this submission.

Applicants believe that there is no fee required for the submission of the Pre-Appeal Brief Request for Review. However, if for any reason one or more fees are required for the entry and consideration of that Request, these Remarks, or anything else being filed herewith, the Commissioner is hereby authorized and requested to charge Deposit Account No. 04-1105.

Respectfully submitted,
Edwards Angell Palmer & Dodge, LLP

Date: August 28, 2009

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